AVERBUKH, Yu.A., inzh.

Analytical method for determining electric power consumption by motor-coach trains. Vest. TSNII MPS 17 [i.e. 19] no. 7:54-57 '60. (MIRA 13:11)

1. Leningradskiy Gosudarstvennyy proyektno-izyskatel'skiy institut Mintransstroya.
(Electric railroads--Current supply)

AVERBUKH, Yu.A., inzh.

Determining operation cost in comparing road variants. Avt. dor.
26 no.5:22-23 My '63. (MIRA 16:7)

(Roads--Design)

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102610002-9

AVERBUKH, Z. K.

Distr: 4E2c(j)/4E2d

15 20 16

✓ Protective coatings on movie films. L. V. Rozental', [illegible]
O. K. Smirnov [illegible]

[illegible] the above soln [illegible] [illegible] NH4OH [illegible] the cellulose [illegible]

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102610002-9"

ROZENTAL', L.V.; AVERBUKH, Z.K.; BURDYGINA, G.I.; MUKOVNINA, A.F.;
STRYUKOVA, V.V.

Black anti-halation layer for color films. Usp. nauch. fot. 8
67-71 '62. (MIRA 17:7)

IMSHENETSKIY, A.A.; KASATKINA, I.D.; AVERBUKH, Z.K.; TUPITSYNA, R.S.;
IVANOVA, A.A.; SHERSTYUK, I.A.

Production of proteolytic enzymes by Bacillus mesentericus and their use for regeneration of triacetate motion-picture films. Mikrobiologiia 33 no.4:719-726 Jl-Ag '64. (MIRA 18:3)

1. Institut mikrobiologii AN SSSR i Shostkinskiy khimicheskiy zavod.

AVERBURG, A.L., studentka V kursa; KOZLOVSKAYA, N.V., studentka V kursa.

The formation of undergroud waters and the reclamation of land in southern Khorezm. Sbor.stud.rab. SAGU no.12:26-32 '55.
(MLRA 9:5)

(Khorezm--Water, Underground)

AVERBURG, N.V.

Disintegration of clay and marl rocks under the influence of simultaneous application of hyposulfite and hydrogen peroxide. Vop. mikropaleont. no.6:147-148 '62. (MIRA 15:11)

1. TSentral'naya khimicheskaya laboratoriya Uzbekskogo gidrogeologicheskogo tresta.
(Micropaleontology) (Dithionites) (Hydrogen peroxide)

AVERBURG, Veniamin Vasil'yevich, prof., zasluzhennyy deyatel' nauki;
RYBAKOVA, N.T., red.; TSYPPO, R.V., tekhn.red.

[Making of microscopic preparations; a manual for teachers of secondary schools] Izgotovlenie mikroskopicheskikh preparatov; posobie dlia uchitelei srednei shkoly. Moskva, Gos.uchebno-pedagog.izd-vo M-va prosv.RSFSR, 1959. 81 p. (MIRA 13:5)
(Microscopy--Technique)

L 40304-65 EWT(m) RM
ACCESSION NR: AP5008719 S/0366/65/001/003/0610/0610

AUTHORS: Favorskaya, I. A.; Averburg-Kononova, K. A.

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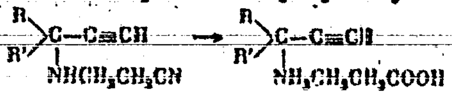
19
B

TITLE: Synthesis of N-alkynyl aminoacids

SOURCE: Zhurnal organicheskoy khimii, v. 1, no. 3, 1965, 610

TOPIC TAGS: aminoacid, hydrolysis, acetylene aminonitrile, ether, hydrochloric acid, chemical analysis, infrared spectrum

ABSTRACT: N-alkynyl-β-aminoacids were produced by hydrolysis of acetylene aminonitriles. The reaction



$$\underset{R'}{\overset{R}{>}}\underset{\mathrm{NHCH_2CH_2CN}}{\mathrm{C}}\!-\!C\equiv CH \rightarrow \underset{R'}{\overset{R}{>}}\underset{\mathrm{NH_2CH_2CH_2COOH}}{\mathrm{C}}\!-\!C\equiv CH$$

was conducted at room temperature in an ether solution and in the presence of hydrochloric acid. The yield of hydrochloride salts of aminoacids was 90%. Aminoacids were separated from the mineral salts by extraction with petroleum ether saturated with methanol. The method devised by K. A. Kononova and I. A. Favorskaya (Vest. LGU No. 16, 155, 1962) was followed to determine aminoacids in the presence of mineral salts. Quantitative results of the product analysis are presented and the bands noted in the infrared spectra of hydrochloride salts are listed.

Card 1/2

L 40304-65

ACCESSION NR: AP5008719

Orig. art. has: 1 formula.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: 05Nov64 ENCL: 00 SUB CODE: CC

NO REF SOV: 002 OTHER: 000

Card 2/2

AVERCHENKO, A.A., fel'dsher (Novaya Iolcha Gomel'skoy oblasti)

Special chest containing first aid supplies. Fel'd. i akush. 22 no.2:38-39 F '57 (MLRA 10:5)

(FIRST AID IN ILLNESS AND INJURY)

SHLAIN, I.B., kand.tekhn.nauk; MYZDRIKOV, Yu.A., inzh.; AVERCHENKOV, A.P., inzh.

Improving drilling and blasting operations at quarries. Sbor. trud. NIIZHelezobetona no.7:17-34 '62. (MIRA 16:1)
(Quarries and quarrying)

AVERCHENKO, B.; ZAMYATIN, M.; NOVIKOVA, L., tekhn. red.

[Value the honor of the Soviet toiler]Dorozhit' chest'iu sovetskogo truzhenika; sbornik statei. Moskva, Izd-vo "Pravda," 1962. 277 p. (MIRA 15:12)

(Agricultural workers)

CHERNENKO, M.B.; LUKIN, Yu.B.; GUSEV, K.M.; KUDREVATYKH, L.A.; MAKARENKO, Ya.I.; SATYUKOV, P.A., red.; STEPANOV, V.P., red.; SELYUK, S.I., red.; SUTOTSKIY, S.B., red.; ABALKIN, N.A., red.;KOZEV, N.A., red.; AVERCHENKO, B.Ye., red.; SOBOLEV, L.S., red.; SIMONOV, K.M., red.; POLEVOY, B.N., red.; GALIN, B.A., red.

[Heroes of our times] Geroi nashikh dnei. Moskva, Izd. gazety "Pravda," 1961. 619 p. (MIRA 14:11)
(Labor and laboring classes)

[illegible], D.

AUTHOR: Averchenko, D. and others. 136-1-15/20

TITLE: Yakob Leonovich Dlugach - Obituary

PERIODICAL: Tsvetnyye Metally, 1958, No.1, pp. 77 - 78 (USSR).

ABSTRACT: During the major part of his career, Y.L. Dlugach was engaged in elaborating projects for new non-ferrous metals works in the Giprotsvetmet organisation. The projects which he dealt with include the Ust'-Kamenogorsk, the Chimkentsk, the Leninogorsk and the Sikhotealin' Lead Manufacturing Works, the Balkhash and the Dzhezkazgan Copper Smelting Works, the rolling shop of the Elektrotsink Works. He also participated in the elaboration of overall plans for the development of the Soviet non-ferrous metals industry.

AVAILABLE: Library of Congress

Card 1/1

AVERCHENKO, D.G.; VARTANYAN, A.M.; KOPCHENKO, D.S.

Introducing electrothermic methods at the Ust'-Kamenogorsk Lead and Zinc Combine. TSvet. met. 31 no.5:35-38 My '58. (MIRA 11:6)

1. Ust'-Kamenogorskiy svintsovo-tsinkovyy kombinat.
(Ust'-Kamenogorsk--Nonferrous metals--Electrometallurgy)

AVERCHENKO, M., otv. za vyp.; SHNEYDER, N., tekhn. red.

[Economy of Ternopol Province; collected statistics]Narodno hospodarstvo Ternopil's'koi oblasti; statystychnyi zbirnyk. L'viv, Derzhstatvydav, 1962. 280 p. (MIRA 15:12)

1. Ternopol', (Province)Statisticheskoye upravleniye.
(Ternopol Province--Statistics)

AVERCHENKO, M.P., otv. za vypusk; KOVTUN, V., tekhn.red.

[Economy of Ternopol Province; statistics] Narodne hospodarstvo Ternopil's'koi oblasti; statystychnyi zbirnyk. Ternopil', Oblvydav, 1957. 270 p. (MIRA 12:10)

1. Ternopol (Province). Statystychne upravlinnia. 2. Statisticheskoye upravleniye Ternopol'skoy oblasti (for Averchenko).
(Ternopol Province--Statistics)

AVERCHENKO, P.A.

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Device for Controlling Forgings with a Metallographic Microscope. V. E. F[illegible] and P. A. Averchenk[illegible] (Zavod[illegible]aya *Laboratoriya*, 1955, 21, (7), 870). [In Russian]. A very brief account is given of a simple arrangement which enables polished sections on large forgings to be examined with a horizontal metallographic microscope. — N. S.

2

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AVERCHENKO, P.A.; BOROTA, F.P.

Electronic photocolorimeter. Zav. lab. 22 no.12:1506-1507
'56.
(MLRA 10:2)

(Colorimets)

AVERCHENKO, P.A.; BOROTA, F.P.

Induction high-frequency device for detecting cracks. Zav.lab.23 no.2:243-246 '57. (MLRA 10:3)

(Metallography--Apparatus and supplies)

SOV/137-59-3-7158

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 3, p 316 (USSR)

AUTHOR: Averchenko, P.A.

TITLE: An Apparatus for the Control of the Thickness of the Aluminized Layer on Stainless Nonmagnetic Alloys (Pribor dlya kontrolya velichiny alitirovannogo sloya na nerzhaveyushchikh nemagnitnykh splavakh)

PERIODICAL: Tekhn.-ekon. byul. Sovnarkhoz Zaporozhsk. ekon. adm. r-na, 1958, Nr 1, pp 40-42

ABSTRACT: The author offers an induction device for the control of the thickness of the aluminized layer on machine parts of any dimensions. The action of the device is based on the utilization of the higher magnetic properties of the layer as compared with the nonmagnetic core. The apparatus consists of an induction coil, a step-down transformer supplying filament current for the tubes, an amplifier, a magnetizing (primary) transformer coil and a two-cascade bridge-type amplifier. A milliammeter, serving as the indicator of the apparatus, is plugged into the diagonal of the bridge of the second cascade of the amplifier. The apparatus is tuned up on specimens having minimum and maximum thicknesses of the layer. P. N.

Card 1/1

AVERBENKO, P.A.

Defektoskopiya metallov; sbornik statey (Flaw Detection in Metals; Collection of Articles) Moscow, Oborongiz, 1959. 458 p. Errata slip inserted. 4,550 copies printed.

Ed.: D.S. Shrayber, Candidate of Technical Sciences; Ed.: M.S. Lagovskaya; Tech. Ed.: V.Z. Rozhin; Managing Ed.: A.S. Zaymovskaya, Engineer.

PURPOSE: This book is intended for engineers and technicians in the field of nondestructive inspection and testing of metals.

COVERAGE: This collection of articles deals with methods of nondestructive inspection and testing of metals. Results of investigations conducted at scientific research institutes and plants of magnetic, electrical, X-ray, ultrasonic, and fluorescent-penetrant methods of flaw detection are described. Detailed descriptions of flaw-detection methods and equipment are presented. Data are given on the status of the development of flaw-detection methods in non-Soviet countries. No personalities are mentioned. References follow several of the articles.

Falik, A.A. Magnetization of Parts by Alternating Current and Inspection by the Magnetic-particle Method 47

Pyrkina, D.G. Measuring Magnetic Fields on Parts of Intricate Shape and Inspection of Blades by the Magnetic-particle Method 55

Mikhnevich, P.G. Equipment for Inspecting Parts by the Magnetic-particle Method 6.

Semenov, V.M. Automatic Flaw Detector for Inspecting Mass-produced Steel Parts 76

[illegible], G.M., and G.Ya. Sila-Novitskiy. Electromagnetic Induction Method of Flaw Detection 80

Nabokova, I.N. Some Methods and Instruments for Nondestructive Inspection of the Thickness of Coatings on Parts 111

Fikhenval'd, V.I. Practical Application of Electomagnetic Methods of Nondestructive Testing 117

Suvorov, L.M. Flaw Detection in Light-alloy Parts by the Electromagnetic Induction Method 126

Averbenko, P.A. High-frequency Induction Instrument for Detecting Cracks and Intergranular Corrosion 133

Polyak, E.V. Fluorescent-penetrant Flaw-detection Method and the Experience Gained by Its Use in Machine Building 139

Lut'sko, S.P. Magnetic and Fluorescent-penetrant Inspection of Parts in the Repair and Servicing of Aircraft Equipment 155

Falik, A.A. Characteristic Features of the Use of the Fluorescent-penetrant Method of Inspecting Parts 163

Sila-Novitskiy, G.Ya. Nondestructive Magnetic Methods for Measuring Thicknesses of Coatings 166

Orlanskiy, I.I. Electrical Thickness Gage for Measuring Anodized Coatings of Aluminum-alloy Parts 184

Suvorov, L.M. Thermoelectrical Method of Measuring Thicknesses of Electroplated Coatings 189

Suvorov, L.M. Thermoelectrical Method of Inspecting the Quality of Bonds in Bimetals 192

Yermolayev, E.I. Use of Back-scattering Beta-radiation for Inspecting Thicknesses of Coatings 196

Chernobrovov, S.V. New X-Ray Equipment and Image Recorders for X-Ray Flaw Detection 202

Chernobrovov, S.V. X-Ray Tube With Rotating Anode 219

Shrayber, D.S. Ultrasonic Flaw Detection 241

Lange, Yu.V., and G.V. Prorokov. Equipment for Ultrasonic Inspection 370

Lange, Yu.V., and D.S. Shrayber. General Characteristics of the Pulse-Echo Type Ultrasonic Flaw-detection Method 387

Falik, A.A. Characteristic Features of the Pulse-Echo Type Ultrasonic Flaw-detection Method 404

Kurvin, M.I. Ultrasonic Flaw-detection in Forgings and Valuation of the Size of the Defects Revealed 409

Lange, Yu.V., and G.V. Prorokov. Automation of Ultrasonic Inspection 413

Shrayber, D.S., and I.I. Teumin. Application of Ultrasonic Vibrations for Processing and Testing Materials 429

14(11)

AUTHORS: Averchenko, P. A., Borota, F. P. SOV/32-25-1-40/51

TITLE: Automatic Machine for Controlling the Hardness of Steel Products (Avtomat dlya kontrolya tverdosti stal'nykh izdeliy)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 1, pp 112-114 (USSR)

ABSTRACT: This machine serves for controlling the hardness of fastening pins and similar articles according to the coercive force. L. G. Doropey, D. T. Yushchenko, Ye. I. Shkolenko and A. S. Kosik took part in the construction of this machine. The test pin is conveyed from a container via a distributing device into a vertical pipe (850 mm long). During this stage the pin is completely magnetized (in a magnet coil), demagnetized (in a demagnetizing coil) and induces an electromotive force in the form of a single sinusoid in the measuring coil. Dependent on the polarity and the magnitude of the amplitude of the sinusoid the pin is conveyed into one of the cells (for hard, soft or normal articles) by means of a special electron scheme. The number of controlled pins is recorded by a counter. This automatic machine can control 7000 short or 3000 long pins per hour. According to the hardness of the pins the test is carried

Card 1/2

SOV/32-25-1-40/51

Automatic Machine for Controlling the Hardness of Steel Products

out following the method of the "pure" "coercitimetry" (by measuring the coercive force) or "coercimetrically - remanentoscopically" (by measuring the coercive force and the remanent magnetism). A detailed description of the machine and a diagram (Fig 1) as well as its electric scheme (Fig 2) are given. Wire lines PE-0.18mm, PE-0.06 mm, a milliamperemeter M-24, an amplifier 6N9, a thyratron TG-2050, an electromagnetic relay U1719399, F6690031 and a lamp 5Ts4S are mentioned in the description. There are 2 figures.

Card 2/2

L 42922-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JF

ACC NR: AP6029056 SOURCE CODE: UR/0413/66/000/014/0082/0082

INVENTOR: Averchenko, P. A.; Alekseyenko, M. F.; Babakov, A. A.; Babitskaya, A. N.; Batrakov, V. P.; Bondarenko, A. L.; Gabuyev, G. Kh.; Yel'tsov, K. S.; Kulygin, G. V.; Lola, V. N.; Orekhov, G. N.; Pridantsev, M. V.; Sklyarov, P. I.; Smolyakov, V. F.; Soroko, L. N.; Solov'yev, L. L.; Frantsov, V. P.; Shamil', Yu. P.; Moshkevich, Ye. I.; Natanov, B. S.

53

15

ORG: none

18

TITLE: Stainless steel. Class 40, No. 183947.

SOURCE: Izobret prom obraz tov zn, no. 14, 1966, 82

TOPIC TAGS: stainless steel, chromium titanium steel, molybdenum containing steel, nitrogen containing steel, titanium containing steel

18

ABSTRACT: This Author Certificate introduces a stainless steel containing chromium, molybdenum, and nitrogen. In order to improve weldability, the steel has the following composition: 0.08% C, up to 0.8% Mr, up to 0.8% Si, 15—18% Cr, 0.2—0.6% Mo, 0.04—0.15 N, 0.4—1.2% Ti, up to 0.035 S, and up to 0.030 P. [WW]

SUB CODE: 11/ SUBM DATE: 30Jan65/ ARB PRESS: 5215

Card 1/1

UDC: 669.14.018.8: 669.15'26-194

AVERCHENKO, V.P., inzh.; KIRPATOVSKIY, G.V., inzh.; POKH, I.Ye., inzh.

Electric power supply of the construction site of the Krasnoyarsk Hydroelectric Power Station. Energ. stroi. no.41:45-54 '64. (MIRA 17:11)

AVERCHENKOV, A.P., inzh.; KRITSKIY, V.G., inzh.; MYZDRIKOV, Yu.A., inzh.

Improving boring and blasting at quarries. Stroi. mat. 9 no.2:7-10 F '63. (MIRA 16:2)

(Boring) (Blasting) (Quarries and quarrying)

BUYANOV, Yuriy Dmitriyevich, kand. tekhn. nauk; AVERCHENKOV, Anatoliy Pavlovich, gornyy inzh.; BESSMERTNYY, Konstantin Sergeyevich, gornyy inzh.; AKSENOV, V.P., kand. tekhn. nauk, retsenzent; BELYAKOV, Yu.I., kand. tekhn. nauk, retsenzent; GEYMAN, L.M., red.izd-va; LAVRENT'YEVA, L.G., tekhn. red.

[Sand, gravel, crushed stone and clay quarries] Peschano-graviinye, shchebenochnye i glinianye kar'ery. Moskva, Izd-vo "Nedra," 1964. 358 p. (MIRA 17:3)

AVERCHENKOV, A.P.; BUYANOV, Yu.D.; GILEVICH, G.P.; RODIN, R.A.;
SHLAIN, I.B.

[Quarrying and processing crushed stone] Dobycha i pererabotka kamnia na shcheben'. [By] A.P.Averchenkov i dr. Moskva, Stroiizdat, 1964. 219 p. (MIRA 17:12)

SOV/136-58-5-6/22

AUTHORS: Averchenkov, D.O., Vartanyan, A.M., Kopchenko, D.S.

TITLE: Introduction of Electrothermy at the Ust'-Kamenogorsk Lead-zinc Combine (Vnedreniye elektrotermii na Ust'-Kamenogorskom svintsovo-tsinkovom kombinate)

PERIODICAL: Tsvetnyye Metally, 1958, Nr 5, pp 35 - 38 (USSR)

ABSTRACT: The authors discuss a recent article by V.N. Kostin in Tsvetnyye Metally, 1958, Nr 1, in which the greater application of electrothermic methods in lead and zinc production is mentioned. They list some disadvantages of shaft-furnace smelting and state the importance of developing new methods for Soviet lead-smelting works, a favourable factor being the increasing availability of cheap hydro-electric power. Electric heating of settlers was substituted for oil heating at the Ust'-Kamenogorsk Lead-zinc Combine in 1953 without altering dimensions (length, width and depth - 7 100, 2 960 and 660 mm, respectively), but experience and joint work by works and VNIItsvetmet personnel led to reconstruction with the volume reduced from 13 to 8 m^3. After listing conditions for successful operation of such stationary settlers, the authors describe

Card 1/3

SOV/136-58-5-6/22

Introduction of Electrothermy at the Ust'-Kamenogorsk Lead-zinc Combine

the smelting of silver-containing dross in an electric furnace under an artificial slag layer (30% Na_2O, 30% CaO, 40% SiO_2): tabulated compositions show that this method gives a higher recovery of noble metals into the silver-lead than with retort distillation. This work was also carried out by the same organisations and the collaborator is continuing to improve the method and to convert the 150-ton refining kettles to electric heating. The authors outline the present electric kettle-heating method with nichrome strip resistance heaters and urge the development of induction heating for higher efficiency. They agree with Kostin on the need for special design staffs in existing institutes with proper equipment for the rapid development of electrothermic methods. They do not agree with his suggested scheme for converting the Ust'-Kamenogorsk Lead Works to electric smelting as data are lacking; they would prefer the Giprotsvetmet to design a new, separate works. They urge the rapid completion

Card 2/3

SOV/136-58-5-6/22

Introduction of Electrothermy at the Ust'-Kamenogorsk Lead-zinc Combine

of full-scale trials at the Leninogorsk Lead Works of electrothermic processes.
There are 1 table and 1 Soviet reference.

ASSOCIATION: UKSTsK (Ust'-Kamenogorsk Lead-zinc Combine)

Card 3/3

1. Metallurgy--USSR 2. Zinc ores--Processing 3. Lead ores--Processing 4. Electric furnaces--Applications 5. Metals--Separation

SOV/136-59-1-9/24

AUTHORS: Averchenkov D.O., Kopchenko D.S., Pron'kin V.F., Sidorovskiy V.A., Kershanskiy I.I. and Ovcharenko V.P.

TITLE: Introduction of an Electrothermic Method of Distilling Zinc from Silver Crust at the Ust'-Kamenogorskiy Lead Works (Vnedreniye elektrotermicheskogo sposoba distillyatsii tsinka iz serebristoy peny na Ust'-Kamenogorskom svintsovom zavode)

PERIODICAL: Tsvetnyye Metally, 1959, Nr 1, pp 33-40 (USSR)

ABSTRACT: The authors point out that as continuous desilvering of lead is not used in the USSR, methods of crust enrichment are being sought. A system (Ref 7) in which fusion under carnalite is followed by vacuum distillation has proved unsatisfactory while that successfully used in Bulgaria (Ref 8) is not applicable to Soviet crusts. Based on enlarged laboratory and pilot plant work at the VNIITsvetmet in 1956-1957 (Ref 9) an experimental production unit based on electrothermic zinc-distillation was built at the Ust'-Kamenogorskiy lead works and has operated from November 1957 to the present. The authors give the results obtained and describe the plant.

Card 1/4

SOV/136-59-1-9/24

Introduction of an Electrothermic Method of Distilling Zinc from Silver Crust at the Ust'-Kamenogorskiy Lead Works

I.P. Volkov, N.V. Kungurov, K.B. Boztayev, D.R. Demurin and others from the works and V.P. Kuur, F.A. Mardamshin, Yu.K. Medel'tsov, A.I. Tkachenko and V.P. Shchurchkov of VNIITsvetmet, participated. The electro-thermic installation (Fig 1) consisting of an electric furnace, oxidation chamber and dust catchers, was designed by the design department of the UKSTsK under the direction of A.V. Bratchik. The works and VNIITsvetmet laboratories performed necessary chemical analyses. The 3-phase 300-kVA furnace has a hearth bottom area of 2 m^2 and an effective height of 1.8 m. Fig 2 shows a vertical section through the furnace. The normal tapping hole is situated 140 mm above the bottom. The furnace is charged with an Irtyshskiy medeplavil'nyy zavod (Irtysh copper-smelting works) type feeder (Fig 3). Power is supplied by two type EPOM-250/6 transformers with a total rating of 500 kVA. The electrodes are graphitized and 200 mm in diameter. Distillations of zinc were effected at 1150-1300°C, giving lead bullion (sent for cupellation), dust (discharged periodically and sent to the zinc works) and

Card 2/4

SOV/136-59-1-9/24

Introduction of an Electrothermic Method of Distilling Zinc from Silver Crust at the Ust'-Kamenogorskiy Lead Works

gases. All materials were weighed, gas flows were measured and, during runs for establishing materials balances, gas analyses were periodically carried out. In such runs a crust containing 64.35% lead, 25.8% zinc, 0.55% copper and 88407 g/ton silver of somewhat variable size-grading (Table 1 shows this for two samples) was used. The results (Table 2) of a 16-day run in 1957 show that 95% of the lead in the crust was transferred into the bullion which, the authors recommend, should be refined electrolytically. The products were almost exclusively lead bullion (which contains the major part of the noble metals) and distillate (71.3 and 35.2% respectively of the weight of crust taken). Losses, of lead, zinc and silver, were insignificant. The adoption of the electrothermic method at the works (Fig 4 shows the flowsheet) has led to a doubling of labour productivity and a 4.49% improvement in raw-materials utilization as well

Card 3/4

SOV/136-59-1-9/24

Introduction of an Electrothermic Method of Distilling Zinc from Silver Crust at the Ust'-Kamenogorskiy Lead Works

as to improved working conditions in the cupellation department and great economies.

There are 4 figures, 2 tables and 9 references, 8 of which are Soviet and 1 English.

ASSOCIATIONS: Ust'-Kamenogorskiy svintsovo-tsinkovyy kombinat (Ust'-Kamenogorsk Lead-zinc combine) and VNIITsvetmet.

Card 4/4

NOVOSELOV, S.S.; VARTANYAN, A.M.; KISHKAREV, V.A.; AVERCHENKOV, D.O.;
SIDOROVSKIY, V.A.

Pilot plant testing methods of removing copper from crude lead with transfer of the copper into matte. TSvet. met. 35 no.5: 25-31 My '62. (MIRA 16:5)
(Lead--Metallurgy) (Copper--Metallurgy)

SOV-120-58-3-10/33

AUTHORS: Veretennikov, A. I. and Averchenkov, V. Ya.

TITLE: A 20-Channel Time Analyser for the Selection of Neutrons by the Time of Flight Method (20-kanal'nyy vremennoy analizator dlya selektsii bystrykh neytronov po vremeni proleta)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1958, Nr 3, pp 48-53 (USSR)

ABSTRACT: The multichannel time analysers now available may be divided into two groups. In the first group are the so-called "chronotrons" (Refs.1-6). The analysers in this group have a practical resolving time of 10^{-9} sec and they will measure time intervals with an accuracy of 0.25×10^{-9} sec. The second group of analysers involves circuits which transform time intervals into pulse amplitudes (Refs. 7-12). The second group has the advantages that (1) the circuits are relatively simple, (2) a large number of channels is possible, (3) it is possible to study in detail parts of the neutron spectrum by operating with the amplitude analyser only and without changing the time characteristics of the scheme. A 20-channel time analyser is described in

Card 1/3

SOV-120-58-3-10/33

A 20-Channel Time Analyser for the Selection of Neutrons by the Time of Flight Method

the present paper which is based on the basic circuit given by Neilson and James (Ref.10). The analyser as described by Neilson and James has the disadvantage of being "two-sided", i.e. it works independently of the sequence of the input pulses. This disadvantage is now removed by the introduction of additional circuit elements. The complete circuit of the analyser including the values of the components employed is shown in Fig.3. The practical resolving time of the analyser is (1.5-3) x 10^{-9} sec and the stability of channel edges is 0.5 x 10^{-9} sec. The calibration curve of the analyser is shown in Fig.4. The curve is a plot of the amplitude vs delay between pulses. The calibration curve is linear in the range (2-30) x 10^{-9}. As an example, the time distribution obtained with neutrons of a Po-Be source is shown in Fig.6. Yu. S. Zamyatnin and Yu. I. Il'in are thanked for advice and assistance respectively. S. G. Basistov and N. V. Cherepnin supplied specimens of new

SOV-120-58-3-10/33

A 20-Channel Time Analyser for the Selection of Neutrons by the Time of Flight Method

valves, L. G. Leyteyzen, A. G. Berkovskiy and N. S. Khlebnikov supplied specimens of new photomultipliers and L. M. Belyayev and G. F. Dobrzhanskiy supplied specimens of large crystals. There are 6 figures and 14 references, of which 2 are Soviet, 1 Italian and the rest English.

SUBMITTED: August 9, 1957.

1. Time-interval counters--Design 2. Time-interval counters--Applications 3. Timing circuits--Applications 4. Neutron spectra--Analysis

Card 3/3

S/089/60/008/04/06/009
B113/B017

AUTHORS: Veretennikov, A. I., Averchenkov, V. Ya., Savin, M. V., Spekhov, Yu. A.

TITLE: Gamma Radiation Occurring in U^{238} Under the Action of Neutrons of the Energy 14 Mev 9
9

PERIODICAL: Atomnaya energiya, 1960, Vol. 8, No. 4, pp. 361-363

TEXT: In the neutron interaction with U^{238} the spectrum of gamma radiation was measured in the range of from 0.4 to 2.8 Mev and the gamma quantum yield per interaction event in three samples. The measuring apparatus (Fig. 1) and the measurement process are described. The mean gamma radiation energy is 0.98 Mev. The energy resolution in measuring the gamma-spectrum was $\simeq$ 30% with $E_{\gamma} = 662$ kev and $\simeq$ 15% with $E_{\gamma} = 2.62$ Mev. The mean number of gamma quanta per interaction event $\bar{\eta}$ for $\sigma = 2.85$ barns is 6 ± 1.2. The authors thank Yu. S. Zamyatnin for discussion and V. G. Kokoulin for the preparation of the stilbene crystal. There are 3 figures and 4 references: 3 Soviet and 1 English.

Card 1/2 /B

Gamma Radiation Occurring in U^{238} Under the Action of Neutrons of the Energy 14 Mev

S/089/60/008/04/06/009
B113/B017

SUBMITTED: October 12, 1959

V/B

Card 2/2

32992
S/641/61/000/000/019/033
B108/B102

26.2245

AUTHORS: Averchenkov, V. Ya., Veretennikov, A. I.

TITLE: Integral cross sections of U^{235} and Th^{232} interaction with neutrons having energies of 2 - 8 Mev

SOURCE: Krupchitskiy, P. A., ed. Neytronnaya fizika; sbornik stat Moscow, 1961, 258 - 262

TEXT: The neutron cross sections of U^{235} and Th^{232} specimens were determined by measuring the time passing until the neutrons reach the detector. The latter was connected to a 50-channel time analyzer with the new 6Ж22П (6Zh22P) thermionic tubes. A steady-flow neutron source of Po-Be was used. Measurements were made with and without specimen between source and detector. Moreover, the random coincidences were measured with an additional delay of 75 millimicroseconds in the detector channel. The integral neutron cross sections were calculated with the formula $\sigma_t = \frac{1}{nx} \ln[(N_o - N_{bo})/(N_x - N_{bx})]$ where n denotes the number of nuclei per cm^3 of the specimen, x - thickness of specimen (cm), N_o, N_{bo}, N_x, N_{bx} -

Card 1/~~1~~2

32992

Integral cross sections of.... S/641/61/000/000/019/033
B108/B102

counting rates of neutrons and coincidence background with and without specimen. The results for Th^{232} and U^{235} are shown in Fig. 2. Corrections for elastic scattering have been introduced. Yu. S. Zamyatnin is thanked for discussions. There are 2 figures and 6 references: 1 Soviet and 5 non-Soviet. The four most recent references to English-language publications read as follows: Bloom S. D. Phys. Rev., 98, 233 (1955); Progress in Nuclear Energy, ser. I, v. I, London, Pergamon Press, 1956; O'Neill G. K. Phys. Rev., 95 (1954), Rev. Sci. Instr., 26, 285 (1955); Ref. 6: Hughes D., Schwartz. Neutron Cross Sections, BNZ, N. Y., 1958.

X

Card 2/2

81395

S/120/61/000/002/005/042
E032/E114

21.2246

AUTHORS: Verstennikov, A.I., Averchenkov, V.Ya., Savin, M.V., and Spekhov, Yu.A.

TITLE: Gamma-spectrometer using an organic scintillator and time selection of gamma rays

PERIODICAL: Pribory i tekhnika eksperimenta, 1961, No.2, pp. 42-46

TEXT: A description is given of a gamma-spectrometer which can be used to select gamma-rays with a time resolution of about 1 nanosec. The spectrometer incorporates a plastic scintillator, and the energy resolution for Cs^{137} gamma rays is about 25%. With a sodium iodide crystal the time resolution is about 4 nanosec and the coincidence counting efficiency for Co^{60} gamma rays is 90%. The use of ordinary scintillation gamma-ray spectrometers in the study of gamma-rays produced under the action of fast neutrons is complicated by interference from the primary and secondary neutrons. However, if the primary neutrons are accompanied by, say, alpha or gamma rays, the gamma radiation under investigation can be separated from the interfering radiation by the time-of-flight method. Suppose that the

Card 1/6

12095

S/120/61/000/002/005/042
E032/E114

Gamma-spectrometer using an organic scintillator and time selection of gamma rays

recording apparatus and the specimen under investigation are located relative to the neutron source, as shown in Fig.1. In this figure, C_1 is the detector which records the accompanying alpha, gamma etc. emission and C_2 is the detector designed for measuring the gamma-rays from the specimen. The distribution of time intervals between pulses from C_1 and C_2 reaching the time analyser is shown in Fig.2. Fig.2a shows the time distribution of primary neutrons and gamma rays arriving at the specimen, Fig.2б shows the primary neutrons and gamma-rays from the specimen and Fig.2в shows the secondary neutrons and gamma-rays from the specimen. As can be seen from Fig.2, even with a continuous primary neutron energy spectrum, it is possible to separate out the gamma-rays produced in the specimen by the primary neutrons by a suitable choice of ℓ_1 and ℓ_2. In the present paper this type of gamma-spectrometer is discussed in terms of an example in which the gamma-rays produced in various specimens by 14 Mev neutrons are investigated. A block diagram of the spectrometer is

Card 2/6

21395

S/120/61/000/002/005/042
E032/E114

Gamma-spectrometer using an organic scintillator and time selection of gamma rays

shown in Fig.3. The neutrons were obtained from the $d(T, n)He^4$ reaction. The instant at which the neutrons leave the target is recorded by counting alpha particles with a plastic scintillator, as described by the present authors (Ref.2: Atomnaya energiya, 1960, No.4, 361). The gamma-rays are detected by a stilbene crystal mounted on a ФЭУ-33 (FEU-33) photomultiplier. Pulses from the 12th dynode of this photomultiplier are amplified by the amplifier Y_6. With the key $П_2$ in the closed position, these pulses reach the 50-channel kicksorter through the linear gate БП 2. With the key $П_1$ in position 2, the gate БП2 is controlled by pulses arriving from the output of the time analyzer. By introducing a delay t_1 into the gamma channel, the working conditions of the time-amplitude converter can be chosen so that pulses due to gamma-rays and neutrons from the specimen are delayed relative to pulses due to the alpha particles. As a result, the alpha-gamma coincidences at the output of the time analyzer have a greater amplitude than the alpha-n coincidences.
Card 3/6

21395
S/120/61/000/002/005/042
E032/E114

Gamma-spectrometer using an organic scintillator and time selection of gamma rays

The integral amplitude discriminator Д5 transmits only the alpha-gamma coincidence pulses to the gate БП2 and this ensures the separation of effects due to neutrons from those due to gamma-rays. The time distribution of the coincidence is recorded by the same amplitude analyzer with the key П1 in position 1. The time analyzer has been described in detail by the present authors (Ref.3: PTE, 1958, No.3, 48). The remaining designations in Fig.3 are said to be "self-evident". The gamma-spectrometer can be used to measure gamma-spectra appearing in a given time interval, e.g. in the study of time correlated processes such as the emission of gamma-rays in fast-neutron induced reactions. There are 6 figures and 7 references: 4 Soviet and 3 non-Soviet.

SUBMITTED: May 6 1960

Card 4/6

21595

S/120/61/000/002/005/042
E032/E114

Gamma-spectrometer using an .....

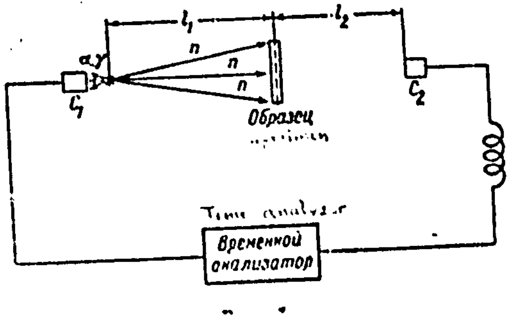

Fig. 1

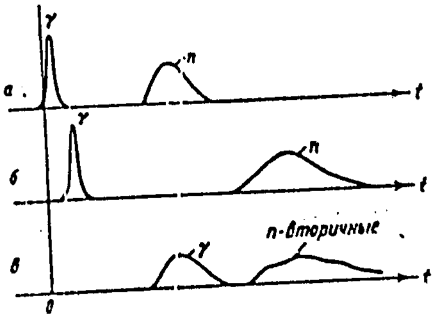

Fig. 2

Card 5/6

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E032/E114

Gamma-spectrometer using an ....

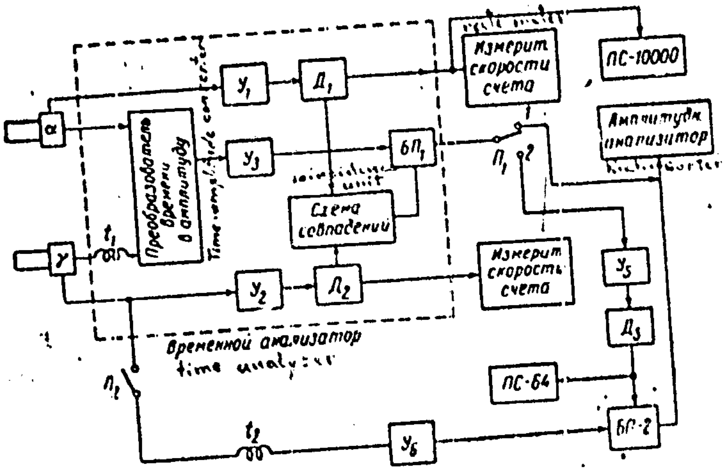


Fig. 3

Card 6/6

21408
S/120/61/000/002/019/042
E192/E382

6,4760

AUTHORS: Veretennikov, A.I., Averchenkov, V.Ya., Yegorov, A.G. and Spekhov, Yu.A.

TITLE: Amplifying Units for the Oscillographic Display of Short Pulses

PERIODICAL: Pribory i tekhnika eksperimenta, 1961, No. 2, pp. 104 - 109

TEXT: Two single-tube amplifiers suitable for high-speed pulse oscillographs are described. The first amplifier is based on a tube with a cathode grid (sometimes referred to as a "space-charge tube" or a "tube with a virtual cathode") which is capable of producing high anode currents when its auxiliary (cathode) grid is pulsed with a comparatively high voltage amplitude (up to 100 V). The circuit diagram of the amplifier (with some auxiliary circuits) is given in Fig. 1. The space-charge tube is 6Ж20П2 (6Zh20P2) (this is an experimental tube). The amplifier is designed for the pulse repetition rate not exceeding 10 p.p.s. The operation is as follows. When the amplitude of the input pulse is about 1 V,

Card 1/6

22408
S/120/61/000/002/019/042
E192/E382

Amplifying Units ....

the thyratron (shaded tube) is ignited and a pulse is applied to the cathode grid of the space-charge tube (the righthand-side tube in the circuit). This pulse has an amplitude of about 150 V and its flat top has a duration of about 0.5 μs. The investigated pulse is applied to the control grid of the tube 50 nanosecs after the appearance of the voltage at the cathode grid. The voltage appearing across the anode load of the space-charge tube is taken by means of a cable (type PK-50 (RK-50)) having a length of 1 m and is applied to the deflection plates of the cathode-ray tube. The anode-grid characteristic of the space-charge tube is linear over a comparatively large range of currents so that at the supply voltage of about 800 V a current in excess of 1 A can be obtained over the linear region; the slope is about 33 mA/V. The gain of the amplifier is 10 and its bandwidth is 90 Mc/s, which corresponds to the rise time of about 4.3 nanosecs. A high-speed amplifier can also be based on a secondary emission tube. A circuit of this type is shown in Fig. 5. The secondary emission tube Л (= L) in the

Card 2/6

21408

S/120/61/000/002/019/042
E192/E382

Amplifying Units ....

figure is normally cut off by a negative-grid voltage of about 10 - 20 V since its anode dissipation is only 2 W. The reflection plates of the cathode-ray tube are connected to the anode and the dynode of the tube by coaxial lines (type ПК-3 (PK-3)), which also act as the delay lines for the signal. The difference in the electric lengths of these lines corresponds to the transit time of an electron from the dynode to the anode; in practice, this amounts to about 10 cm (this is chosen experimentally). The triggering circuit of the oscillograph is usually connected to the input to one of these lines through a resistance. The secondary emission tube can give a pulse current of up to 7 A with a slope of 100 mA/V at the anode supply voltage of 1 000 V and dynode voltage of 3 00 V. The deflecting voltages of about 700 V can be obtained from this amplifier. The bandwidth of the amplifier is about 200 Mc/s, which corresponds to the rise time of 2 nanosecs. The gain of the system is 12 - 16, depending on the anode voltage. The circuit of Fig.5 is designed for the oscillographic display of the pulses derived from scintillation transducers

Card 3/6

22408
S/120/61/000/002/019/042
E192/E382

Amplifying Units ....

(counters). In this the pedestal of the pulse is applied to the lefthand-side portion of the circuit, which is in the form of a two-stage amplifier. This provides the necessary lengthening and then limiting of the output voltage. The pedestal is formed from the pulses derived from one of the dynodes of the photomultiplier. The amplitude of the pedestal applied to the control grid is about 3 V. The line having a delay of about 60 - 70 nanoseconds is included in the investigated signal circuit which delays the signal for the duration of the pedestal-forming. The authors make acknowledgment to S.G. Basistov and G.V. Lukoshkova for supplying the samples of new tubes.
There are 8 figures.

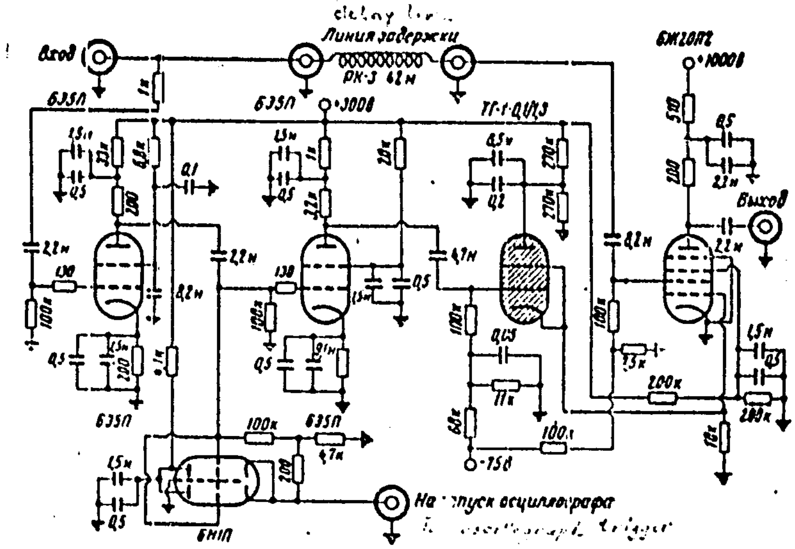
SUBMITTED: May 27, 1960

Card 4/6

Amplifying Units ....

S/120/61/000/002/019/042
E192/E382

Fig. 1:



Card 5/6

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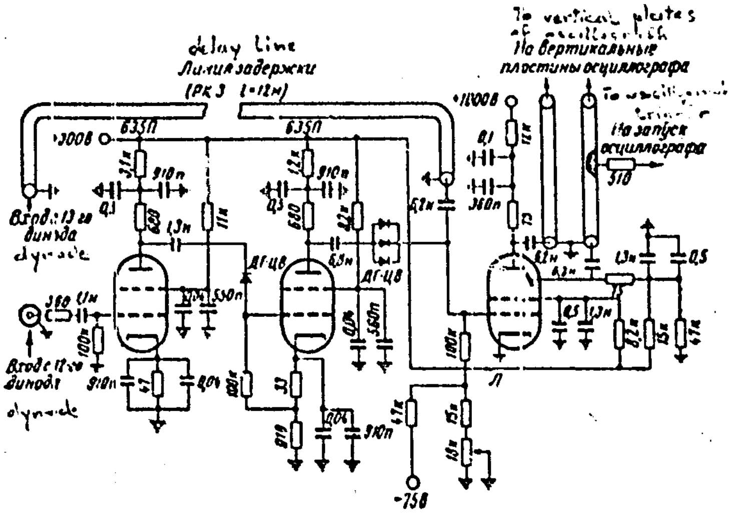
E192/E382

Amplifying Units ....

Fig. 5:



Card 6/6

S/089/61/011/002/007/015
B102/B201

AUTHORS: Veretennikov, A. I., Averchenkov, V. Ya., Savin, M. V.

TITLE: Measurement of the time distribution of gamma radiation in wood by the method of delayed coincidences

PERIODICAL: Atomnaya energiya, v. 11, no. 2, 1961, 177-180

TEXT: This paper presents results of measurements of the time distribution and the energy spectrum of gamma quanta from a point source, which were scattered in wood. Little has been published on this subject so far. The time distribution was determined at distances of 200 cm from the point source. A Co^{60} source (0.12 μc) emitting pairs of gamma quanta was fastened to wood; the scintillation detector 1 which recorded the instants of emission of quanta was placed close to the source, and its pulses were fed to a time analyzer. The second scintillation detector 2 was 200 cm away from the source, and likewise transmitted its pulses to the time analyzer. The distribution of time intervals between the two pulses was recorded. The solving time of the time analyzer was $2\tau = 2.3$ μμsec, and the mean quantum energy was about 1.25 Mev. The time distribution of gamma radiation in wood

Card 1/6

is a function of the cross sections of Compton scattering, of the photoelectric effect, and of pair production. The time distributions in materials with similar atomic numbers may be assumed to differ only by a scale factor; this fact makes it possible to estimate the distribution in similar light materials from that in wood. The geometrical experimental setup is shown in Fig. 1; it was so chosen because it imitated an infinite medium best. Scintillation plastics and photomultipliers of the type ФЭУ-33 (FEU-33) were used for gamma recording. The block diagram of the measuring arrangement was as follows:

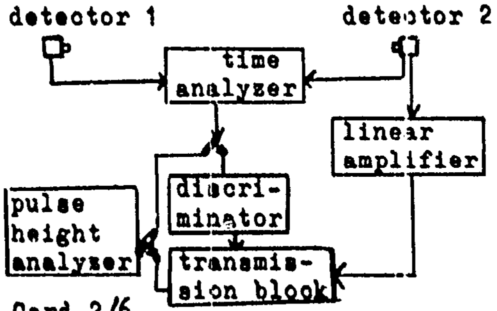


Fig. 2. shows the time distribution of gamma radiation, as recorded by detector 2 (Curve 1); curve 3 shows the background of random coincidences. The zero point of the analyzer time scale was determined according to the middle of curve 2 of γ-γ coincidences without wood but under otherwise equal conditions. As may be seen, the time distribution of gamma

radiation in wood covers a period of 20 μμsec at a distance of 200 cm from the point source. The maximum is shifted by about 1.6 μμsec toward the zero point, which corresponds to a prolongation of the quantum path by about 1.5 mean free paths. The mean time of delay of quanta is about 6 μμsec, and the half-width of the distribution peak is about 7 μμsec. Curve 4 (Fig. 3) was obtained on the assumption that the mean gamma energy is ~100 kev in case of great delays, and 0.8 Mev in case of the most probable delay time. The true time distribution is likely to be found between curves 1 and 4. Fig. 4 shows the energy spectrum of gamma radiation at a distance of 200 cm from the source. Ya. B. Zel'dovich, Yu. S. Zamyatnin, and V. G. Morozov are thanked for discussions. There are 4 figures and 12 references: 6 Soviet-bloc and 6 non-Soviet-bloc. The two most important references to English-language publications read as follows: L. Spenser, U. Fano. J. Res. Nat. Bur. Standards, 46, 446 (1951); G. Whyte. Canad. J. Phys. 33, 96 (1955).

SUBMITTED: December 29, 1960

AVERCHUK, S., vitse-admiral

Intraparty democracy is the basic feature of party work. Komm. Vooruzh.Sil 2 no.15:40-45 S '62. (MIRA 15:8)
(Communist Party of the Soviet Union)

AVERCHUK, S., vitse-admiral

Collectivity of Leadership, an indispensible condition of the normal activity of party organizations. Komm. Vooruzh. Sil 5 no.23:18-25 D '64.
(MIRA 18:1)

AVERCHUK, S., vitse-admiral; ZHURAVKOV, N., kapitan 1-go ranga

Let's talk about the style of the political administration's work. Komm. Vooruzh. Sil 46 no.4:24-32 F '65.

(MIRA 18:5)

AVERCHUK, S., vitse-admiral; MEDVEDEV, P., kapitan 1-go ranga

To guide means to improve organizational work. Komm. Vooruzh. Sil 46 no.2:24-30 Ja '66. (MIRA 19:1)

AVERCHUK, S.I., vitse-admiral

Single command, the most important principle of the building of the Soviet Armed Forces. Mor. sbor. 49 no. 12:8-14 D '65 (MIRA 19:1)

L 38[illegible]-66 [illegible]

ACC NR: AP6015396 (N) SOURCE CODE: UR/0375/65/000/012/0008/0014

AUTHOR: Averchuk, S. I. (Rear admiral) 17 B

ORG: none

TITLE: Single command--The most important principle in the organization of the Soviet Armed Forces

SOURCE: Morskoy sbornik, no. 12, 1965, 8-14

TOPIC TAGS: military policy, political personnel, political thought

ABSTRACT: The author describes the single command principle as follows: the single command principle is based on the independent and personal responsibility of the officer to the State for the activity with which he is entrusted. It provides for greater initiative and independent action in decision-making under any circumstances. It improves the combat readiness of the forces, strengthens military discipline, and gains respect for individual officers. The responsibility of each officer, from lowest to highest rank, is to maintain the political indoctrination and interpretation of the party line to subordinates, relying on help from political and party organizations. The purpose in introducing the single command principle was to increase the control of the party in the Armed Forces by direct control through the Central Committee.

SUB CODE: 15,05/ SUBM DATE: none/ ORIG REF: 008

Card 1/1

AVERICHEV, I.

Additional use of machinery. Prom.koop. no.8:11 Ag '57.
(MIRA 10:9)

1. Starshiy mekhanik promkolkhoza imeni Stalina, Moskva.
(Moscow--Clothing industry)

AVERICHEV, Yevgeniy Petrovich; AKSINEVICH, Vladimir Iosifovich;
RASKIN, Mikhail Nikolayevich; KUZNETSOVA, L.G., red.

[Reconditioning plunger pairs; practice of the Zaraysk
Machinery Plant] Vosstanovlenie plunzhernykh par; iz
opyta raboty Zaraiskogo mekhanicheskogo zavoda. Moskva,
Biuro tekhn. informatsii, 1964. 31 p. (MIRA 18:5)

ZARETSKIY, Leonid Markovich; AVERICHEV, Yu.P., red.; DM[illegible],
A.B., red.

[Technical mechanics; a textbook] Tekhnicheskaia mekhanika; uchebnoe posobie. Moskva, Prosveshchenie, 1965. 266 p.
(MIRA 18:5)

22(1) SOV/47-59-3-10/53

AUTHORS: Averichev Yu.P., Bondarev D.D., Grinberg Yu.L., Shalayev F.K.

TITLE: Relating Courses in Physics to Industrial Practice

PERIODICAL: Fizika v shkole, 1959, Nr 3, pp 27-31 (USSR)

ABSTRACT: This is a survey of practical training in physics received by pupils of school 144 in Moscow. Practical training begins in the 6th class. The pupils visit the plant, where later on (9th class) they will do practical work, and the teachers illustrate the subject of the lessons with examples taken from plant practice. The work to be performed at the plant in the 9th class extends over approximately 200 hours. In the course of a training year, the participants work at the plant once a week for 4 hours, and after the termination of the school year there follows a continuous practice of 12 days. During his training, each participant works at two places, where he is

Card 1/3

Relating Courses in Physics to Industrial Practice

(physics, chemistry, etc) in production; enlarge, deepen and consolidate this knowledge; 4) get the trainee acquainted with the different kinds of labor and help him in the selection of a profession; 5) favor the development of a Communist attitude toward work. The authors give a survey of the training at the plant and at the school and list some tasks given to the pupils.

ASSOCIATION: 144-ya shkola, Moskva (School Nr 144, City of Moscow)

SMIRNOV, Vyacheslav Sergeyevich; AVERICHEV, Yu.P., red.; TATURA, G.L., tekhn. red.

[From fir tree to newspaper]Ot elki do gazety. Moskva, Uchpedgiz, 1962. 57 p. (MIRA 16:1)

(Newsprint)

DURASEVICH, Yuriy Yevgen'yevich; IVANOVICH, K.A., red.; AVERICHEV, Yu.P., red.; KREYS, I.G., tekhn. red.

[Training of rural electricians]Podgotovka sel'skogo elektromontera; iz opyta shkoly pamiati V.I.Lenina v Gorkakh Leninskikh. Pod red. K.A.Ivanovicha. Moskva, Uchpedgiz, 1962. 135 p. (MIRA 16:4)

1. Deystvitel'nyy chlen Akademii pedagogicheskikh nauk RSFSR (for Ivanovich).
(Electricians--Education and training)
(Rural electrification--Handbooks, manuals, etc.)

BESHENKOV, A.K.; AVERICHEV, Yu.P., red.; KOVALENKO, V.L., tekhn. red.

[Manual training in school workshops] Trudovoe obuchenie v shkol'nykh masterskikh; iz opyta raboty v V-VII klassakh. Moskva, Uchpedgiz, 1963. 185 p. (MIRA 16:7)
(Manual training--Methods and manuals)

SOV/137-58-11-21981

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 11, p 21 (USSR)

AUTHORS: Savintsev, P. A., Avericheva, V. Ye.

TITLE: The Contact Fusion of Crystals (O kontaktnom plavlenii kristallov)

PERIODICAL: Dokl. 7-y Nauchn. konferentsii, posvyashch. 40-letiyu Velikoy Oktyabr'sk. sots. revolyutsii. Nr 2. Tomsk, Tomskiy un-t, 1957, p 53

ABSTRACT: A description is presented of the phenomenon of contact fusion of crystals forming a eutectic. The phenomenon is explained by the fact that the reaction between homogeneous atoms predominates in the solid state, while that between heterogeneous ones is dominant in the liquid. The temperature of contact fusion [illegible] is the temperature at which a transition occurs from the one type of reaction among the particles to the other. Contact fusion is also observed in the case of components forming solid solutions. The appearance of a liquid phase occurred in this case at tens or hundreds of degrees below the temperature of fusion of the individual crystals. Prior diffusion at a temperature lower than t does not influence contact fusion.

D. B.

Card 1/1

SOV/137-58-11-23251

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 201 (USSR)

AUTHORS: Savintsev, P. A., Avericheva, V. Ye.

TITLE: Contact Melting of Crystals (Kontaktnoye plavleniye kristallov)

PERIODICAL: Izv. vyssh. uchebn. zavedeniy. Fizika, 1957, Nr 1, pp 162-166

ABSTRACT: Bibliographic entry

Card 1/1

SAVINTSEV, P.A.; AVERICHEVA, V.Ye.

Melting points of the contact layer in crystals. Izv. TPI 95: 242-247 '58. (MIRA 14:9)

1. Predstavleno professorom doktorom A.A.Vorob'yevym.
(Melting points) (Alkali metal halides--Thermal properties)

AUTHORS: Savintsev, P. A., Avericheva, V. Ye. SOV/79-28-6-58/63

TITLE: On the Problem of Contact Melting of Crystals (K voprosu o kontaktnom plavlenii kristallov)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6, pp. 1700 - 1701 (USSR)

ABSTRACT: The authors mention the inaccurate data in the paper by M.Kh. Gluzman and V.P.Rubtsova (Ref 1) dealing with the contact melting of the organic systems consisting of three and four components, which are of a cryohydric nature. The contact melting can be explained, as the authors write, by the different conversion between similar and different atoms (Ref 2); in the solid state the conversion between similar atoms is prevailing, and in liquid state that of different atoms. The temperature of contact melting is the temperature at which the transition from one type of conversion of the particles to the other takes place. It can be assumed that this phenomenon does not only occur in cryohydric systems but also in systems forming solid solutions. Therefore in such a case the occurrence of contact melting can be expected. To prove this the authors carried out experiments with the crystals mentioned in the table. The crystals A and B (see table) were

Card 1/3

On the Problem of Contact Melting of Crystals SOV/79-28-6-58/63

brought into contact and heated. At the temperature (t°) a liquid occurred at the contact. The radiographic investigations of the solidified alloys obtained in contact melting carried out by the authors proved that they had to deal with solid solutions. The system KCl-NaCl is an exception. In this case the radiograph point at a mixture of components. The thermal analysis of the system KCl-NaCl tends to show solid solutions which decompose at temperatures below 495°. It is obvious that this way the radiographs type KCl-NaCl is explained. Substances forming solid solutions are capable of diffusing into each other, which fact causes their fusion at temperatures lower than the melting point of the components. Further temperature experiments permitted the conclusion that the diffusion processes do not exert any influence on the contact melting of the crystals and that the temperature at which it takes place represents a physical quantity which is determined by the character of the nearness of the particle arrangement. There are 5 references, 5 of which are Soviet.

SUBMITTED: May 29, 1957

Card 2/3

On the Problem of Contact Melting of Crystals SOV/ 79-28-6-58/63

1. Crystals--Temperature factors

Card 3/3

AUTHORS: Savintsev, P. A., Avericheva, V. Ye. 20-119-5-26/59

TITLE: On the Melting Temperature of the Contact Layers Between Crystals (O temperature plavleniya kontaktnogo sloya kristallov)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 119, Nr 5, pp. 936 - 937 (USSR)

ABSTRACT: The physical properties of the polycrystals to a large degree depend on the properties of the boundary of the contacting grains. Therefore the investigation of those phenomena is of interest which take place on the contact surface of crystals. Such an investigation can be made easier by the observation at the boundary between two monocrystals, as the orientation of the surfaces of monocrystals can be changed at random. Also such crystals can be investigated which earlier had been subjected to various influences. Other conditions are valid for the surface particles than for the particles in the interior of the crystal. They have a greater potential energy and therefore are more mobile. Their mobility decreases with the rise of temperature, which fact makes easier the mixing through of the particles of the boundary surfaces and can lead to the

Card 1/3

On the Melting Temperature of the Contact Layers Between Crystals 20-119-5-26/59

ting took place only at the moment of contact of the samples. Therefore the previous diffusion might not have any noticeable influence on the temperature of contact melting. The radiographical investigation showed that because of the contact melting eutectic structures as well as solid solutions can form. There are 1 table and 6 references, 6 of which are Soviet.

PRESENTED: December 11, 1957, by A. F. Ioffe, Member, Academy of Sciences, USSR

SUBMITTED: December 11, 1957

Card 3/3

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E201/E191

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AUTHORS: Savintsev, P.A., Avericheva, V.Ye., Zlenko, V.Ya., Vyatkina, A.V., and Ignat'yeva, M.I.

TITLE: On the Nature and the Linear Velocity of Contact Melting 18

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1959, Nr 5, pp 128-133 (USSR)

ABSTRACT: Contact melting is used in preparation of alloys (Ref 1) and in physico-chemical analysis (Ref 2). It was suggested (Ref 3) that contact melting of alkali-halide crystals is due to formation of a low-melting-point solid solution by mutual diffusion of the components. To study contact melting in greater detail the authors measured the temperature dependence of the lattice constants of components in the eutectic mixture of powders KCl-KI (Figs 1 and 2), the temperature dependence of the surface and bulk diffusion coefficients in KCl-NaCl (Table 1), KCl-KBr, and KCl-KI monocrystals, the temperature dependence of the electrical conductivity of the powder mixtures KI-NaCl (Table 3), KI-NaBr (Table 3), and the heat of formation of the eutectic alloys KCl-K_2CrO_4 (Table 2), KCl-KI (Table 2). The authors used the X-ray diffraction method developed for high 4

Card 1/3

68875

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E201/E191

On the Nature and the Linear Velocity of Contact Melting

temperatures at the Institute of General and Inorganic Chemistry, Acad.Sci. USSR (Ref 4). The experiments showed that the contact melting in crystals with unlimited mutual solubility and in crystals forming eutectic alloys is similar. Contact melting can be considered as a proof of mutual solubility of the components. The initial stage of contact melting is a diffusion process. This process produces a layer which is the lowest-melting-point alloy of the two components. The next stage is formation of a liquid layer with subsequent dissolution of the solid components in this liquid. The later stages of contact melting can be described in terms of a "linear velocity" which is the rate of reduction of the length of a rod-shaped sample (Table 4). This velocity can be related to the physical and chemical properties of the components and their melt (Table 5).

There are 2 figures, 5 tables and 9 Soviet references. 4

Card 3/3

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On the Nature and the Linear Velocity of Contact Melting

ASSOCIATION: Tomskiy politekhnicheskiy institut imeni S.M.Kirova (Tomsk Polytechnical Institute imeni S.M. Kirov)

SUBMITTED: April 6, 1959

Card 3/3

5 (2), 5 (4)

AUTHORS: Savintsev, P. A., Avericheva, V. Ye., Zlenko, V. Ya. SOV/20-127-4-28/60

TITLE: On the Nature of Contact Fusion of Alkali-halide Crystals

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 4, pp 828 - 830 (USSR)

ABSTRACT: The mechanism and kinetics in the formation of contact fusion alloys (eutectic alloys or solid solutions are formed) have not yet been investigated. A diffusion-like nature was ascribed to the contact fusion alloys. There is an unlimited mutual solubility in these alloys. To clarify the processes taking place in the formation of contact fusion alloys, the alkali-halide mixtures were X-rayed at high temperatures. The methods and the X-ray high-temperature camera developed by the X-Ray Laboratory of the Institut obshchey i neorganicheskoy khimii AN SSSR (Institute of General and Inorganic Chemistry of the AS USSR) were used for the investigation. In the Debye diagram, the lines of the single components KCl-NaCl, observed up to 600°, disappear at 635°, and the lines of the solid solutions appear. In the

Card 1/3

On the Nature of Contact Fusion of Alkali-
halide Crystals

SOV/20-127-4-28/60

system KCl-KJ, the lines of the components are present at temperatures t < 300°, at t > 500° they are shifted (formation of the solid solutions KCl in KJ and KJ in KCl). Due to the expansion by heat, the lattice periods of both the components grow at first. In the beginning diffusion process, the period of the alloy-KCl grows fast, and the period of KJ becomes smaller again. The diffusion process was investigated by means of the monocrystals KCl-KBr, NaCl-NaBr, and KCl-KJ at temperatures near those of the contact fusion alloy. Further, the crystals were tempered, for different periods of time, at the given temperatures, and the compositions originating on the contact surface were investigated by X-rays. It was shown that with the approach to the temperature of the contact fusion alloy the tempering times became smaller to attain the composition corresponding to the minimum of the melting diagram of the system KCl-KBr. Similar results were obtained for the system NaCl-NaBr. In the system KCl-KJ, limited solid solutions were formed on both contact surfaces at 500°. The observation of the appearance of the contact fusion alloys indicates the mutual solubility of the components. The measure-

Card 2/3

On the Nature of Contact Fusion of Alkali-halide Crystals SOV/20-127-4-28/60

ment results concerning the formation heat of solid eutectic alloys are compiled in table 1. There are 2 figures, 1 table, and 11 Soviet references.

PRESENTED: April 8, 1959, by V. D. Kuznetsov, Academician

SUBMITTED: April 8, 1959

Card 3/3

AVERICHEVA, V. Ye., Cand Phys-Math Sci (diss) - "Contact melting of alkali halides". Tomsk, 1960. 11 pp (Tomsk State U im V. V. Kuybyshev), 150 copies (KL, No 15, 1960, 131)

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26.2510

S/139/60/000/004/040/044/XX
E073/E535

AUTHORS: Savintsev, P. A., Avericheva, V.Ye. and Kostyukevich, [illegible] V.

TITLE: On the Speed of Contact Fusion of Alkali-Haloid Crystals

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, No.4, pp.107-109

TEXT: In earlier work (Ref.5) the authors stated that contact fusion is observed in crystals forming eutectic alloys or continuous series of solid solutions which have a minimum on the fusibility curve. In later experiments (Ref.6) the authors measured the temperature dependence of the lattice periods of the components in the mixture of KCl and KI powders, the temperature dependence of the coefficient of the surface and volume diffusion in single crystals of KCl-NaCl, KCl-KBr, KCl-KI and the temperature dependence of the electric conductivity of the mixtures of the powders KI-NaCl, KI-NaBr. They found that the initial stage of contact fusion of the crystals under consideration is the mutual dissolution of the solid components; this continues until interlayers of solid solutions form along the contact boundaries, the compositions of which correspond to a minimum of the fusibility curve or to the boundaries of solubility of the eutectic systems. The easily fusible interlayers

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Card 1/3

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On the Speed of Contact Fusion of Alkali-Haloid Crystals

fuse and in the thus formed liquid phase the solid components dissolve. The last stage of the process can be characterized by the speed of contact fusion which corresponds to the speed of dissolution of the crystals at elevated temperatures in a solvent consisting of the liquid solution of its components. In the work described in this paper the speeds of contact fusion were measured for a number of alkali-haloid crystals on pressed powder specimens of the investigated salts, 6.5-3.5 mm high and 12.2 mm diameter. From the experimentally determined linear speed of contact fusion, the activation energy of the contact fusion was determined for NaCl in KCl, NaCl in KI, KI in KCl and NaBr; these were respectively (in cal/mol): 37850, 45200, 35300, 17000. The following conclusions are arrived at:

1) The linear (and specific) speed of contact fusion of alkali-haloid crystals coincides with the speed of the solution of the crystal in the melt, which represents the solution of the given component (NaCl, KI) in the other component.

2) The linear (and specific) contact fusion depends on the temperature and obeys the law $v \sim e\,(-U/RT)$.

Card 2/3

85084

S/139/60/000/004/040/044/XX
E073/E535

On the Speed of Contact Fusion of Alkali-Haloid Crystals

3) The linear speed of contact fusion can be utilised as a characteristic of the last stage of the process of contact fusion of alkali-haloid crystals.

It was also found that, irrespective of the temperature of over-heating during contact fusion, the composition of the obtained alloys will not vary greatly. This is shown by numerical values obtained for the system KI-NaBr, where the contents of the individual components varied only by 1% as a result of temperature variations between 587 and 655°C. There are 1 figure, 3 tables and 7 references: all Soviet.

ASSOCIATION:	Tomskiy politekhnicheskiy institut imeni S.M.Kirova (Tomsk Polytechnical Institute imeni S.M. Kirov)
SUBMITTED:	September 21, 1959

Card 3/3

AVERIKHIN, A. I.

AVERIKHIN, A. I. - "Pathomorphological changes in the central nervous system in natural and experimental swine paratyphus." Omsk, 1955. Omsk State Veterinary Inst, Min Higher Education USSR. (Dissertations for degree of Candidate of Veterinary Sciences.)

SO: Knizhnaya letopis', No 48, 26 November 1955. Moscow.

~~AVERKHIN,~~ A. I. AVERIKHIN

"Pathologic and histologic changes in the central nervous system in the case of hog cholera."

Veterinariya, Vol. 37,No. 10, 1960, p. 41

Assistant, Omsk Vet. Inst

AVERIKHIN, A.I., assistent

Pathologicohistological changes in the central nervous system in hog cholera. Veterinariia 37 no.10:41 O '60. (MIRA 15:4)

1. Omskiy veterinarnyy institut.
(Hog cholera) (Nervous system—Diseases)

AVERIN, A.A., inzh.; LITTEROV, S.M., inzh.

Special problems in laying cables at the Lenin Hills
Station of the Moscow subway. Transp.stroi. 9 no.9:51-52
S '59. (MIRA 13:2)
(Moscow--Electric cables)

AVERIN, A.M. [Averin, O.M.] (Saratov)

Bending of a triangular plate having a hole of arbitrary shape. Prykl. mekh. 10 no.6:667-670 '64. (MIRA 18:2)

1. Saratovskiy politekhnicheskiy institut.

USSR/Farm Animals - Swine. Q-4

Abs Jour : Ref Zhur - Biol., No 18, 1958, 83425

Author : Eyudrigovich, Ye.V., Averin, A.V.

Inst : Khar'kov Zootechnical Institute.

Title : Types of Feeds to be Used in the Raising of Swine.

Orig Pub : Sb. tr. Khar'kovsk. zootekhn. in-ta, 1957, 9, 173-185.

Abstract : In tests performed on 3 groups of large white breed sows it was confirmed that it is possible to direct influences through the maternal organism upon the development of young swine from the earliest stages of their ontogenesis. The increase in growth intensity which occurred during embryonal development, affected postembryonal growth in a positive manner. Growth and development were influenced greatly by increases of general protein levels in feeds and by their nutritional values. As pregnant and nursing sows

Card 1/2

LYUBETSKIY, M., kand.sel'skokhoz.nauk; AVERIN, A.V., kand.sel'skokhoz.nauk

Against a defective zootechnical instrument. Zhivotnovodstvo 21 no.9:81-82 S '59. (MIRA 13:1)

1. Khar'kovskiy zootekhnicheskiy institut.
(Agricultural implements)

AVERIN, G.Ye., inzh.

Heating of turbine joint pins. Energetik 12 no.10:7-8 O '64.
(MIRA 17:11)